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10/798,387

03/12/2004

Tse-Hsiang Hsu

3722-0182PUS1

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EXAMINER

KIM, KEVIN

ART UNIT

PAPER NUMBER

2611

| SHORTENED STATUTORY PERIOD OF RESPONSE | NOTIFICATION DATE | DELIVERY MODE |
|--|-------------------|---------------|
|--|-------------------|---------------|

3 MONTHS

04/05/2007

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 04/05/2007.

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|                              |                                      |  |  |
|------------------------------|--------------------------------------|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/798,387 | <b>Applicant(s)</b><br>HSU, TSE-HSIANG |  |
|                              | <b>Examiner</b><br>Kevin Y. Kim      | <b>Art Unit</b><br>2611                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3,6 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Dorschky et al (2002/0186804).

Claim 1.

Dorschky et al discloses a clock recovery circuit, which is capable of automatically adjusting frequency range of a VCO in the clock recovery circuit, the clock recovery circuit comprising:

a main VCO (20) for generating a main oscillation clock;

a phase detector (30) for receiving an input signal and the main oscillation clock and generating a phase error signal;

a main loop filter (18) for receiving the phase error signal and generating a fine control voltage;

an auxiliary VCO (28) for generating an auxiliary oscillation clock;

an auxiliary frequency detector (24) for receiving the main oscillation clock and the auxiliary oscillation clock and generating an auxiliary frequency error signal; and

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an auxiliary loop filter (26) for receiving the auxiliary frequency error signal and generating a coarse control voltage; wherein the main VCO generates the main oscillation clock according to the fine control voltage and the coarse control voltage, and the auxiliary VCO generates the auxiliary oscillation clock according to a reference fine control voltage and the coarse control voltage.

## Claim 2.

Dorschky et al discloses that the coarse control voltage is used to set the frequency range of the main VCO. See the output, i.e., the coarse control voltage, from the VCO (28) is applied to the input port of the main VCO (20)

## Claim 3.

Dorschky et al discloses that the coarse control voltage is used to set the frequency range of the auxiliary VCO. See that the coarse control voltage is applied (via elements 36, 30 and 32) to an input port of the auxiliary VCO (28).

## Claim 6.

Dorschky et al that the clock recovery circuit further comprises a frequency divider (22), which is arranged after the main VCO, for dividing the frequency of the main oscillation clock.

## Claim 7.

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It is considered that the main VCO (20) and the auxiliary VCO (28) have “the same design parameters” such as operating temperature ranges since they are included in a same circuit.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dorschky et al, as applied to claim 1 above, in view of the admitted prior art.

**Claim 4.**

Dorschky et al discloses all the subject matter claimed, as explained above, but for a main frequency detector for receiving the input signal. The admitted prior art shown in Fig.1 of the present application teaches a main frequency detector for receiving the input signal and the main oscillation clock. Such a frequency detector is typical in a phase locked loop for clock recovery. Thus, it would have been obvious to one skilled in the art at the time the invention was made to add a frequency detector as well as a phase detector to generate a reference clock synchronized with an input signal, as described in the Description of the Related Art of the present application.

**Claim 5.**

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It is well established that the main loop filter further receives the main frequency error signal as a reference for generating the fine control voltage.

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dorschky et al (2002/0186804).

Dorschky et al discloses all the subject matter claimed, as explained above, but for the use in a control circuit of an optical disk drive. However, Dorschky et al teaches that the disclosed clock recovery circuit is for use with a high-speed data signal having a low signal to noise ratio. Thus, it would have been obvious to also use in a control circuit of an optical disk drive which transfers data in a high-speed and requires a low SNR at the time the invention was made.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y. Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

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like assistance from a USPTO Customer Service Representative or access to the automated  
information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

March 29, 2007

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**KEVIN KIM**  
**PRIMARY PATENT EXAMINER**

A handwritten signature in black ink, appearing to read 'K. Kim', is written below the printed name and title.